

Club Repeaters W6RGG/R 147.24+, 442.200 (107.2PL)



J U G

## NEXT NCCC MEETING!

This meeting will be held on Friday, January 17, at MIGUEL'S restaurant at 22865 Atherton Street in Hayward. The phone number is (510) 886-7200. You get there by going EAST ON JACKSON off of 880 in Hayward. After you go under the BART tracks, go LEFT on WATKINS, then immediately left on WILLIS. Go a short block, and look across the street to your right. The building with the big longhorn steer logo on it is Miguel's. Dinner is at 6:30 PM, and the meeting at 7:30.

## NCCC OFFICERS

If you have a question or a suggestion, let your officers know about it! (E-mail addresses are given. Other particulars can be found in the NCCC roster.)

	President .....	Carl Cook, AI6V .....	ai6v@aol.com
cd	Vice President/CC .....	Jim Hollenback, WA6SDM	jholly@cup.hp.com
	Secretary/Treasurer .....	Dick Dievendorff, K6KR	dieven@msn.com
	Directors .....		
OK	<del>MSB</del>	Ken Silverman, K2KW	ken.silverman@atlas.ccmil.airtouch.com
OK	MSB	Ed Muns, W0YK .....	w0yk@msn.com
	MSB	Dave Curtis, N6NZ	David_b_curtis@ccm.sc.intel.com
OK	MSB	Andy Faber, AE6Y .....	ae6y@aol.com

## Cook Book

Happy new year, and I sincerely wish health and happiness to all. I hope Santa was as good to everyone as he was to me. We sure had fun from Nevada City in the fall contests with friends and really look forward to the ARRL DX contest from Aruba in February and March. Our goal is to win this contest as a club, so please get on for as much of it as you can squeeze in, and look for a weak signal from P49V. Again, my best to all...

"Carl the cook", AI6V /P49V

## K2KW Shack Cleaning

For Sale: IC551 (6m) w/ Rare modules: FM, Vox, and Passband tuning; desk mic; Lunar 125w amp. Package only. \$600

Sale: IC736 HF + 6M; stuffed w/ filters; service manual. Great home or expedition rig. Over \$2100 invested: \$1450

Contact: Kenny, K2KW at (510) 210-0410 (H); or (510) 279-6411 (W).

# ARRL DX CW CONTEST!



# Updated NCCC ARRL Expedition List

As you hear of NCCC members going on ARRL DX-peditions, please have them give me a call. Attached is the updated list:

Kenny, K2KW

## NCCC "Reserve Your Island" for the ARRL Contest

### ARRL DX SSB:

P4	AI6V +	M/S Planned
KH6	AH7G	SOAB

### ARRL DX CW:

6Y	WM2C, N6TV, N6BT, WS4E	M/2
KH6	N6IG?	(Rumored)
P4	AI6V+	M/S Planned
V2	N6BB, K6PJY, K6XV	M/S or M/2

## ARRL DX CW CONTEST!

The ARRL DX CW Contest is rapidly approaching (Feb 14/15) - it's time to get your station in top shape! The ARRL DX Contest (CW/SSB) was voted as a major effort for the NCCC, so let's all get on and make a major showing, as only the NCCC can! As you recall, DX-peditions now count towards our club score, and there are a bunch of major expeditions going out over both events.

All of the NCCC DX-peditions are serious operations. To support their efforts, and the club's effort, please get on and work them on all bands. This should be pretty easy, since all of the operations are from easy to reach locations such as Hawaii, the Caribbean, and Aruba. You say you don't have an

effective antenna to work these guys on all bands? It doesn't matter! These DX-pedition ops and stations are so good, they'll hear you no matter what piece of wire you load up. For example, K2MM uses his R-7 on 160m to work guys. You're right, the R-7 doesn't resonate on that band, but that doesn't stop John from making contacts on 160m!

Contesting over this past winter has been interesting... although the SFI has been near or at the theoretical low, all time USA and World records continue to be broken. The low SFI shouldn't stop you from getting on for the ARRL!

There have even been a number of high band openings for those who looked. In the ARRL 10m contest, there was a strong opening into South America Sunday morning, as well as daily openings into the Caribbean and the South Pacific. Don't write this band off in the upcoming ARRL contests.

I hope that part of your operating strategy will be to make as many points as you can for the NCCC. Single op, Multi-Single, Multi-Two, or Multi-Multi... it doesn't matter. Just get on and make some serious noise. If your schedule is limited, just get on for a few hours. Every bit helps! And submit your logs!

See you on in the ARRL CW from Jamaica!

Kenny, K2KW (6Y4K)

## Sun pages

Following are the Web Pages for the various views of the sun.

<http://sohowww.nascom.nasa.gov/data/synoptic/>  
[http://sohowww.nascom.nasa.gov/cgi-bin/synop\\_image/961125](http://sohowww.nascom.nasa.gov/cgi-bin/synop_image/961125)

The "movie" selection will have the sun rotate, but you need patience because it takes a while for each view to load on screen. Most of the pictures are inverted (as looking through a telescope), but some are right side up.

It would be appropriate to put these Net addresses in the JUG for any members who are interested in propagation.

73, Louese (KA6ING) / Larry (KD6XY)

## ARRL DX CW CONTEST!



## Better QSK Waveforms

Bob Wolbert, K6XX

The QSK CW waveform of many rigs is hideous. At high speeds, dots become very light. This is caused by a difference in the time the transceiver takes to switch to transmit mode from receive (R-T;  $t_1$  in Figure 1) and the time delay between transmit and receive (T-R;  $t_2$  in Figure 1). If these times were equal, the keyed waveform would be fine. Unfortunately, as the Product Reviews in QST show, nearly all rigs have a much longer R-T delay than T-R.

Increasing the weighting control on your keyer won't do the job for you—it increases the time of both dots and dashes proportional to keying speed and lower speed CW gets stretched more than fast code. What we really want is a fixed period pulse stretcher. The circuit must be customized for a given transceiver's timing idiosyncrasies.

Further complicating the situation is that the "VOX", or "semi break-in," timing error is usually much shorter than the QSK timing error. This means we need two different pulse stretching periods, or else the mode with less shortening will end up too "heavy".

I had these problems with my TS-950. On a suggestion from Dave, W6NL, I added a capacitor across the key line large enough to compensate for the "VOX" mode timing error. It works with the internal pull-up resistor on the key line to create a simple R-C delay timer; the key quickly discharges the capacitor and pulls the key line low, keying the transmitter. When the key opens, the resistor slowly charges the capacitor before the transmission may end, creating the necessary delay. I unscientifically determined the capacitor size by simply listening to a string of high speed dots and placing various capacitors across the key line until the keying sounded proper.

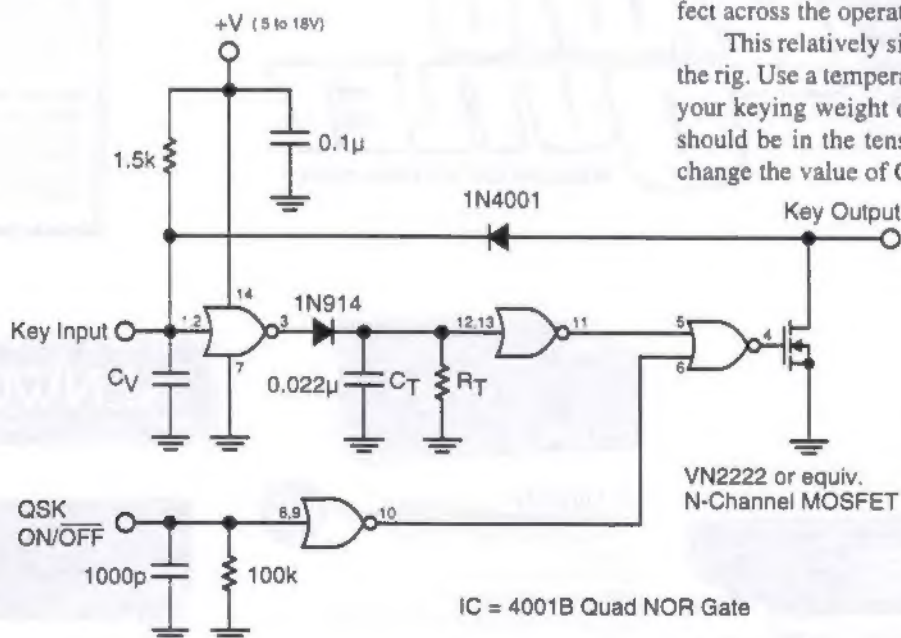


Figure 2. QSK Timing Compensation Circuit mounted inside the rig

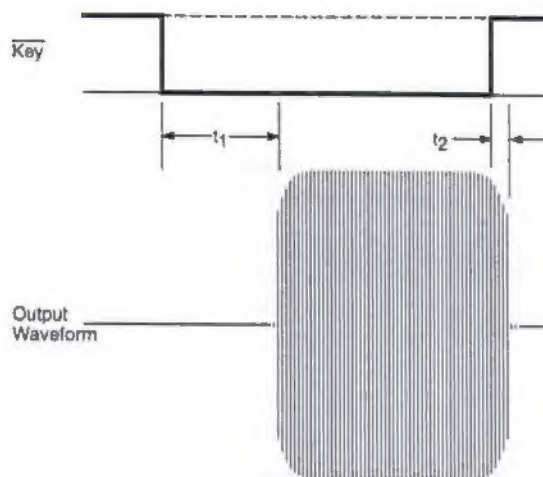


Figure 1. CW Waveform Shortening Caused by Poor Rig Timing

Now the "VOX" keying was close to perfect. QSK-mode keying also improved a bit, but was still miserable. More drastic measures were required. Measuring the QSK timing with a dual-trace oscilloscope by triggering on the keyer output and comparing this with the RF output envelope, the timing was determined as a 15ms R-T delay ( $t_1$  in Figure 1) and a 3ms T-R delay ( $t_2$ ). This means that the pulse stretching timer needs to add 12ms for perfect code. This represents a dot shortened by 33% at 35 WPM.

The circuit of Figure 2 provides the needed timing. It is controlled by the rig's front panel "Semi/Full" QSK switch. When OFF, the timer does not operate and passes the keying signal straight through. When ON, the 4011 CMOS logic gate buffers and delays the rising edge of the keying pulse by a fixed amount, independent of keying speed. This delay is set by  $R_1$  and  $C_1$ . Once this time constant was plugged into the circuit, the CW timing sounded (and measured) perfect across the operating speed range.

This relatively simple circuit should be installed inside the rig. Use a temperature-stable capacitor for  $C_V$  and  $C_T$  so your keying weight doesn't change as the rig heats up.  $R_T$  should be in the tens to hundreds of kilohms. If it is not, change the value of  $C_T$  so it is.

## FIRST CLASS

Full member - June 97  
Charles K. Epps, W6OAT  
651 Handley Trail  
Redwood City, CA 94062

## FIRST CLASS



NCCC  
44 Toyon Terrace  
Danville, CA 94526



Look for the  
HRO Home Page  
on the World Wide Web  
<http://www.hamradio.com>

SUNNYVALE, CA 94086  
510 Lawrence Expwy. #102  
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(800) 854-6046  
Ken, K12KM, Mgr.  
[ken@hamradio.com](mailto:ken@hamradio.com)

OAKLAND, CA 94606  
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